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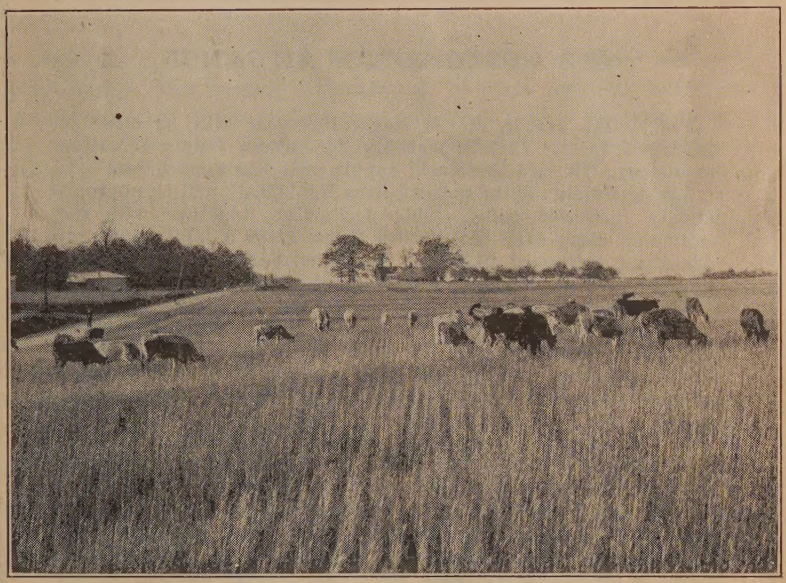
A BUSINESS FARMING PROGRAM FOR NORTH CAROLINA



Better balanced farming will reduce the cotton acreage and is a good business step for the North Carolina farmer.

NORTH CAROLINA
STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
U. S. DEPARTMENT OF AGRICULTURE, COOPERATING
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THE WORLD COTTON SITUATION

The cotton supply of the world this year will be close to 40,000,000 bales. This is probably the largest supply of cotton in history. In 1925 the world supply was 34,000,000 bales.

The production of Amercian cotton for 1926-27 will be approximately 18,600,000 bales. This production, together with the estimated carry-over of 5,730,000 bales, gives a total supply of American cotton of 24,330,000 bales compared with 19,671,000 in 1925-26, or an increase of 24 per cent of American cotton.

The above information means that the world carry-over of American cotton in 1927-28 will be close to 9,000,000 bales. This large carry-over with the crop in 1927 equal to the average of the past three years, would mean a supply of American cotton of approximately 24,000,000 bales. Should this happen the price to the cotton grower will likely be lower in 1927 than it was in 1926. To get prices equal to the average of the past three years the cotton production for 1927 should not exceed 10,000,000 bales, or on an acreage basis with yields equal to the average for the past three years means not more than 32,000,000 acres in cotton. Last year the American farmer planted over 47,000,000 acres of cotton. Therefore to maintain an average price equal to the past three years, the cotton acreage for 1927 should be reduced 30 per cent.

A BUSINESS FARMING PROGRAM FOR NORTH CAROLINA

repared by the School of Agriculture at the North Carolina State College

A practical and successful plan for giving relief to the cotton farmers of lorth Carolina must suggest a substitution of other profitable enterprises n connection with cotton production. With such a plan we must have in ind, not only as much immediate relief as possible, but also a system of arming for 1927 and the succeeding years that there may not be a recurrence f such conditions as now exist among many farmers in cotton counties.

To plan such a substitution, the following facts must be taken into onsideration:

The securing of an increase in the price of the present cotton crop is lmost entirely out of the hands of the grower. He can aid but the major elief must of necessity come through the marketing and financial agencies ow available or to be created.

The present distress is not due, to any appreciable extent, to increased roduction of cotton in North Carolina. While there has been an increase in creage coupled with an increased production per acre, yet the main factor n the large crops of both 1925 and 1926 is the fact that **during the last five ears Texas and Oklahoma have put into cotton more than ten million acres f land that was formerly devoted to grazing and other purposes. This is pproximately five times the total acreage devoted to cotton in North Carolina. nother factor which should be taken into consideration is that it is con-ervatively estimated that an additional ten million acres of land in Texas nd Oklahoma can be cultivated in cotton at a decidedly less production cost er acre than is the case in this State.**

In planning any substitution for cotton we should have in mind that the lorth Carolina farmer is both a consumer and a producer. Many thousand otton growers now purchase in the open market much of their supplies that an be profitably grown on their own farms. It must also be taken into onsideration that there is grave danger in any large number of our farmers ubstituting the other so-called money crops in the place of cotton. The alance of crop production may be easily disturbed. This will result in an ver-production of any other cash crop that they might undertake to pro-uce with just as disasterous results to the individual as is the case under ur present system.

Any change of plan on the part of the management of the farm must in-olve as little additional expense as possible on the part of the farmer ther than his available labor.

The Eight Points in Good Farming

With these facts in mind, the following suggestions are made in the firm belief that if followed, they will stabilize farming on a more profitable basis during the course of the coming year, and succeeding years.

These suggestions are substantiated by actual demonstrations with successful farmers and by the experience of groups of farmers in those counties where such programs have been followed:

1. Each farmer should grow sufficient grain and roughage to supply the needs of his work stock.
2. Grow an all-year-round garden for the purpose of supplying the needs of his family with the necessary vegetables, and in most instances have a surplus to market.
3. Keep at least 50 laying hens to supply the needs of his own family and have a surplus of both poultry and eggs for sale.
4. Keep at least one family cow to supply the family with milk and butter, and wherever sufficient feeds are available, additional cows to produce milk and butter to be sold on the market.
5. Produce sufficient pork for the family's needs. If surplus corn is available, increase the supply of hogs so as to be able to sell on the local market or to take part in coöperative carlot shipments to the larger markets, thus increasing the family income.
6. Plant cotton only on the best cotton lands, and restrict the acreage to those lands that will produce at least a half a bale during a normal season.
7. Have at least two so-called money crops.
8. Begin a definite rotation of crops, which should include a legume crop grown on at least one-fourth of the cultivated acreage each year so as to improve the fertility of the soil and ultimately be able to reduce the cost of production.

If these recommendations are put into operation on most cotton farms, it will automatically reduce the acreage now planted to cotton, it will distribute the available labor throughout the year, and will make the farm more economically profitable, regardless of what farmers in other states may do.

The following information is given by way of explanation so that each farmer may take into consideration his own local conditions and so plan his farming enterprises that he will meet his own needs for food and feed crops, and also produce a surplus.

Growing Feed for Livestock. A good ration for one work animal for one year is approximately 50 bushels of grain and two tons of hay. All of these products can be grown on the average cotton farm. One merchant in a typical eastern cotton county sells on an average, to farmers, more than 2,500 tons of hay per year. Other merchants in the same county are also selling hay. An average of one ton of hay can be, and is being produced per acre in this same county. If this hay were grown instead of being shipped in from other states, it would require about one-fourth of the 25,000 acres now devoted to cotton in that county. Similar conditions exist in other cotton counties.

Gardens. A garden plot of one-half acre is ample to furnish a family f five with a complete and balanced supply of vegetables, together with a ırplus for storing and canning. The all-year garden can be made to sup- ly fresh vegetables at different seasons in the year, and a small amount for ale.

Poultry. Each family should have at least 50 laying hens. In order o maintain this number, it is necessary to raise at least 100 young chickens. 'he cockerels and most of the old birds may then be sold for cash and the emaining hens and pullets carried over for the future. Records of many oultry growers in the State during the past few years show that with proper ıanagement and feed, each hen will return a net profit of at least $2 er bird per year. This offers an unusual opportunity for farmers to have constant income throughout the year, and, in addition, to supply the amily with poultry products.

Dairy Products. It is now agreed by physicians, health officials and utrition investigators that milk is an absolute necessity for the proper rowth of children. In a large number of the cotton counties there is now n average of only one cow to each four to five families. The annual feed equirements for an 800-pound cow are approximately 15 bushels of corn, 0 bushels of oats, 500 pounds of cottonseed meal, 200 pounds of bran, and tons of legume hay. There should also be in addition two acres of good asture. The use of this milk and butter in the home will result in better ealth, a reduction in doctor's bills, as well as the saving from the reduction n other food products now purchased.

Pork. Each farmer should keep one brood sow and grow at least two itters of pigs each year. This would require approximately 125 bushels of orn, and in addition 50 pounds of fish meal and 50 pounds of wheat shorts or each pig. When properly fed, this amount of feed will produce more han one ton of pork. Wherever the farmer has surplus corn, it can be narketed through hogs to greater advantage than by selling it as grain. This has been proven by several hundred farmers who have fed and sold housands of head of hogs during this year and have received a return for heir corn of almost $2 per bushel. This offers an excellent opportunity for he production of the necessary meat supply for the farm, and also as a substitution of a money crop in the place of cotton.

Cotton Production. It is seldom profitable to produce cotton under North Carolina conditions when the yields are less than one-half of a bale per acre. With the present conditions, it is imperative, therefore, that those lands planted to cotton be restricted to such soil as will produce at least one-half bale, and perferably three-fourths of a bale to the acre. An actual study made in 1924 of 1,471 farms showed that ten acres yielding 493 pounds of lint per acre were equal in profits to 29 acres yielding 243 pounds of lint per acre. All ground that will not produce one-half or three-fourths bale per acre should be planted to other crops for soil improvement or other purposes.

Other Money Crops. The cotton farmer who also has a tobacco crop this season is in much better condition than the man who has only cotton. The same condition prevails with those who are now growing other cash crops

along with cotton. However, a large increase in tobacco acreage in 1927 may result in bringing about the same situation with tobacco as is now the case with cotton. A number of farmers have already expressed themselves as intending to plant all tobacco in 1927 in the place of cotton. Such a plan, if carried into effect, will be fatal.

Rotations. North Carolina farmers now use more commercial fertilizer than any other state. This is an expense that must be paid from our money crops. If a definite rotation which includes legumes is followed it will result in improved fertility of the land with greater yields per acre, and a corresponding decrease in the production costs of our crops. At least one-fourth of the cultivated land should be planted to a legume crop each year.

The State College of Agriculture believes in this program because it has proven successful with many farmers in every cotton county in the State and all county and other extension agents will devote their efforts to its full fruition.

FEEDING FARM WORK STOCK

The total expense of feeding the farm work stock of North Carolina is an item of greater significance than realized on first thought. The total number of horses is 171,436 and the total number of mules is 256,569, making a grand total of 428,005 work animals to be fed. As near as can be estimated it will require 50 bushels of grain and two tons of hay to feed each animal a year, thus requiring on a basis of corn 21,400,250 bushels of corn which at $1 per bushel shows a cost of $21,400,250 for grain alone. It is further estimated that it will require two tons of hay annually per animal or a total of 856,010 tons which at $20 per ton would cost $17,120,200. The cost of the grain and hay, therefore, would amount to $38,520,450.

This brings out clearly the enormous cost of feeding the work animals of this State. On the basis of a one million bale cotton crop with a market value of 20 cents per pound it can thus be seen that it costs at least two-fifths the value of this crop to feed the work animals. During the current year the statement would necessarily be much more striking, that is, if compared with this year's crop on a basis of the present crop situation.

In making this statement the values given to the grain and hay are conservative. The farmer who buys his grain and hay, and a large number follow the practice of buying much of the hay used, would be at a much greater disadvantage than the one who grows all of his feed. This brings out clearly the need, first, of growing all grain and hay needed, and secondly, the need of providing pastures to carry the work animals during the idle periods in so far as possible, and third, the necessity of using rations well balanced and at the same time keeping in mind their relative market values. At the present price of cottonseed meal this should be used as a supplement to corn to the extent of 1½ pounds to 2 pounds per animal daily. If the meal is fed it should either be mixed with the grain after grinding same or if the grain is fed whole mix the cottonseed meal with an equal amount of cottonseed hulls as it should not be fed alone.

Certainly every effort should be made to provide all of the feed needed for work stock on the farms. This is neither a large nor a difficult task as two acres devoted to corn under fair conditions of tilth and season should produce the necessary grain and a similar acreage should produce the necessary hay. A good rule to follow in feeding a thousand pound farm work animal is to use 1¼ pounds of grain per 100 pounds liveweight and 1 pound of hay per 100 pounds liveweight and when at medium work merely reverse the process.

THE ALL-YEAR-ROUND GARDEN

If sufficient attention is given to planning the garden, the climate of North Carolina makes it possible to have an all-year-round garden in most sections of the State. Certain vegetables may be planted and others harvested in every month during the year. The all-year-round garden, however, needs to be supplemented with hotbeds and cold frames if the most complete results are to be secured.

A garden plot of one-half acre is ample to furnish a family of five with a complete and balanced supply of vegetables, together with a surplus for storing and canning. The all-year garden in North Carolina may be made to supply the following vegetables at different seasons in the year:

Spring: Cabbage, cauliflower, mustard, onions, spinach, lettuce, garden peas, kale, turnips, carrots, beets, radish, parsley, snap beans, collards, kohl-rabi, asparagus, rhubarb.

Summer: Beans, lima beans, carrots, beets, sweet corn, Irish potatoes, sweet potatoes, cukes, squash, watermelon, cantaloupe, tomato, pepper, okra, onions (dry), New Zealand spinach, cabbage, parsley, celery, eggplant.

Fall: Beans, lima beans, garden peas, cabbage, lettuce, kale, spinach, radish, collards, beets, carrots, Irish potatoes, sweet potatoes, parsnips, tomato, radish, Chinese cabbage, turnips, mustard, pumpkin, squash, sweet corn, chard.

Winter—1 In Frames: Carrots, lettuce, radish, beets. 2 From open field: Spinach, collards, kale, cabbage, turnips, parsnips. 3 Storage: Irish potatoes, sweet potatoes, cabbage, beets, carrots, onion, pumpkin, squash, salsify, dry beans.

Location of Garden

The vegetable garden should be located near the home as the work of caring for the garden is usually done at odd times and thus it is more convenient to have it near the home. Many opportunities for a few minutes work are lost to the distant garden, and it is almost certain to be neglected. Too, in the near-by garden, the vegetables are more easily available to the housewife.

A mistake commonly made by many gardeners is the planting of vegetable seeds without regard to the temperature requirements of the individual crop.

There are two main types of vegetable crops, viz.: those thriving in cool weather and those requiring warm or hot weather for successful growth.

The cool season crops include beets, kale, peas, lettuce, carrots, parsnips, radish, mustard, spinach, onions, turnips, cabbage, cauliflower, and Irish potatoes. Most of these crops may be planted while the soil is still cold and before danger of frost is past.

The warm season crops include beans, corn, cucumbers, melons, eggplant, pepper, squash, pumpkin, tomatoes, and sweet potatoes. These crops are tender, easily killed by frost, and should not be planted until the ground is beginning to warm up. Crops such as eggplant, pepper, tomato, and sweet potato should be started in the hotbed and transplanted to the field as soon as weather conditions are favorable.

Many vegetables grow to maturity in a short time. Succession plantings of these can be made throughout the season, thus keeping up a continuous supply for the table. A sufficient quantity of leafy vegetables should be grown at all times to keep the diet balanced.

The all year character of the garden is made more complete by the fact that many vegetables can be harvested and stored in their fresh state for use during the winter months. Beets, cabbage, carrots, salsify, parsnips, squash, pumpkins, celery, turnips, Irish potatoes and sweet potatoes are included in this list.

The home garden is also a source of desirable material for canning, drying, and pickling. Surplus tomatoes, asparagus, spinach, peas, corn and snapbeans are readily saved for winter consumption by canning. Many vegetables such as sweet corn, okra, pumpkins, peas and beans may be successfully dried. Cucumbers may be conserved by pickling. In short, let your garden supply your canned vegetables.

The Department of Horticulture has issued the following bulletins on gardening which may be had on request:

Extension Circular 122—The Farm and Home Garden Manual.
Extension Circular 123—The Farm Garden.
Extension Circular 150—The Culture and Value of the Farm Home Garden

These bulletins tell:

How to construct hotbeds and cold frames.
How to get early vegetables.
When to plant.
What to plant.
What varieties to plant.
How deep and how far apart to plant.
How much seed is required.
What soils are best.
How to fertilize.
How to cultivate.

THE FARM POULTRY FLOCK

The single farm poultry unit is fifty hens and four males. Every farm should keep at least fifty hens to supply the home needs. One hundred hens and eight males when properly bred, housed, fed and cared for will supply the home needs and will give a surplus of eggs and poultry to sell, bringing in some money each month of the year. In some cases eggs may be sold during the hatching season to hatcheries. This will be from February to the first of May. Occasionally breeding birds may be sold in the fall and winter or a few baby chicks may be sold in the spring. Poultry can be made one of the very best farm cash crops.

How Should Chicks be Reared. Set twelve hens, giving each hen fifteen eggs, for each fifty hens kept. This will provide replacement pullets and furnish table poultry for the family. The combination sitting and brooding coop can be used. Extension Circular No. 6 prepared by the Poultry Department, tells you how to make this coop and how to use it. Hatching should be done from the latter part of February and should be completed by May 1st.

If the farm is to keep one hundred or more hens, then a larger number of chicks should be raised. If more than 200 eggs are to be set the incubator may be used or the eggs may be hatched at the community hatchery or baby chicks may be bought. To rear the chicks by brooder, a house 10 x 12 inches should be built as shown in Extension Circular No. 161 of the Poultry Department. A blueprint of this brooder house will be furnished when you are ready to build house. Extension Circular No. 155 of the Poultry Department on "Natural and Artificial Incubating and Brooding of Chickens" will give helpful information on raising young stock.

The Feed Needed. Hens and young stock need mash, grain mixture, green feed, grit and water.

The mash consists of mill by-products such as wheat middlings, ground grains such as oats and corn, and some kind of animal feed such as fish meal or meat meal. You cannot get winter eggs from hens or proper development of growing birds without feeding mash. Animal feed as fish meal or meat meal is necessary. The surplus milk on the farm will partially or wholly replace the fish meal or meat meal. Two and one-half gallons of milk per day for each fifty laying hens completely replaces the fish or meat meal. The surplus milk in spring and summer can with profit be fed to the growing pullets as they will develop better and come into heavy early egg production when eggs are a high price.

The grain mixture supplements the mash. Tender green feed is necessary and may consist of collards, cabbage or rape. For winter pasture oats or rye may be sown. *Each unit of fifty hens needs four pounds of green feed a day.* Grit such as lime stone is needed. It is necessary to keep clean, pure water before the birds at all times. If the water trough is empty a part of the day it will affect the health of the flock.

Write to Poultry Department, State College, Raleigh, N. C., for Extension circular No. 155 on "Natural and Artificial Incubation and Brooding," and

Circular No. 158 on "Feeding for Egg Production and Fattening Fowls." These circulars will give you the above mentioned feed formulas.

How Much Feed for Rearing Chicks. If 100 chicks per unit of fifty adult fowls are to be reared it will require approximately 450 pounds of feed up to the ninth week. Of this about 250 pounds will be mash and 200 pounds grain.

How Much Feed for Fifty Hens. If all feed is supplied during the whole year the average high laying hen will eat fifty pounds grain and thirty-five pounds mash. On a farm there is a part of the year when the poultry ranges over the fields and secures green feed, worms, bugs, waste grain and other feed and during this time the birds do not eat so much mash. The birds must be carefully watched each day as when a "dry spell" comes and cuts short the forage we must be sure the mash before them is in good condition so they may eat all the feed they need and not "slump" in production. A bird will never over-eat mash as long as she receives grain, but she may under-eat and not give you proper returns.

The fifty hens will need during the year 2,500 pounds of grain feed. For this it will require approximately 1,250 pounds or 23 bushels of corn, 750 pounds or 24 bushels of oats, and 750 pounds or 13 bushels of wheat.

The hens will also need during the year 1,750 pounds of mash. This will require 612 pounds or approximately 10 bushels of corn, 350 pounds or approximately 11 bushels of oats. For each fifty hens raise 33 bushels of corn and 24 bushels of oats, and if in a wheat section, 13 bushels of wheat.

In addition to this quantity of feed, feed will be needed also for the young and growing birds and for this there should be allowed the following. If the farm keeping fifty hens will raise for the poultry a total of 25 bushels of corn, 26 bushels of oats and 15 bushels of wheat, then there will need to be purchased only 400 pounds fish meal, 400 pounds middlings and 75 pounds bone meal.

The House Needed. If fifty hens are to be kept then a house 16 x 20 feet is of sufficient size. If 100 hens are to be kept then a house 20 x 24 feet should be built. When you are ready to build your house ask for Extension Circular 161 on "North Carolina Poultry Houses." After deciding the exact size of your house the above department, on request, will send you large size print of same.

Poultry must have a house with tight roof so that it will not leak during rainy weather. The floor must be dry. Proper ventilation with no draft on the birds is necessary. The house should face south and be provided with an open front. Horizontal dropping boards and perch poles should be provided and the dropping boards should be cleaned at least once a week. Use the droppings for fertilizer. A mash hopper must be provided and the proper kind of mash kept before the birds at all times.

If the farm poultry house does not meet the requirements it may be remodeled or, if this is not possible, a new one built.

Kind of Hens to Keep. All hens do not have the power to produce a large number of eggs. In order to put the farm flock on a paying basis the

birds from which eggs are to be hatched must be carefully selected. You can get a copy of Extension Circular No. 156, which tells you the kind of hens and males to select. During the rearing period the chicks are culled and the ones considered as culls are eaten or sold for that purpose when they are of proper size. Next the pullets are selected, taking those that begin to lay early. The male that is hatched early and develops rapidly and is strong and robust is selected. The male from your highest laying hen is the one to select. Circular No. 156 tells how to handle the hen and how to tell if she is a high, medium, or low producer of eggs.

Do not pen up birds. Let them have the run of the farm. Rear chicks on clean ground. For the control of parasites such as mites, lice, and worms write for Extension Circular No. 160 and for disease control, write for Extension Circular No. 154.

THE FAMILY COW

Although food scientists, doctors and nurses have all agreed that milk is essential in the human diet for the proper development of children and is needed to repair worn out tissues in the adult, there is only one cow to each fifteen persons in fifty of our eastern counties, or approximately one cow to every three families. In order to properly meet the home demand for dairy products in this section it would require the milk produced from three times the present number of cows.

Milk is not only an economical food, but it is the only natural food that contains all the elements necessary to sustain life and build the body. No child has ever yet been raised without milk from some source, either human or animal, and since about sixty per cent of all children born in America are raised on cow's milk isn't the family cow of more importance than most folks think for? Dr. W. S. Rankin, former Secretary of the State Board of Health, says that "The failure to use milk in sufficient quantity and of pure quality with infancy and early childhood is, in all probability, the greatest sin that parents commit against their children. Upon an adequate supply the future of the children and of the race is dependent more perhaps than any other single factor."

The present economic condition of our cotton farmers also makes it important that they consider the dairy cow as a source of cash income to supplement cotton. When the dairy cow is made a part of a well regulated farming system, in which feed crops are grown, she will give a sure profitable return each month in the year on the feed consumed. There are a number of cotton farmers who are now receiving cream checks of from $8 to $12 per month per cow. In addition to the cream check there is left on the farm, skimmilk, a valuable chicken and pig feed, and manure for soil enrichment.

More cows are needed in Eastern North Carolina to help build and conserve soil fertility. The dairy farmer being a consumer rather than a seller of feeds is constantly building up the fertility of his soil. On a basis of

twenty cents a pound for nitrogen and five cents each per pound for potash and phosphoric acid, soybean hay has a fertilizing value per ton of $13.31, cowpea hay $13.66, corn $7.20, wheat bran $14.80 and cottonseed meal $29.88. These raw materials when fed to a cow can be converted into cream which has a market value per ton of $270, and a fertilizing value of only $2. It will be noted from the above that although cream has a high market value, its fertilizing value is very low as compared to that of the feeds from which it is produced. This is a matter that should receive serious consideration from North Carolina farmers who find it necessary to spend millions of dollars annually for commercial fertilizers.

Feed for the Cow

The number of cows that it will pay to keep per farm for cream production will depend upon the amount of pasture and home grown feeds available. Many of the cows in this State fail to produce a profit because they are underfed. In order for a good average size cow to produce butterfat at a profit, she will need annually the following quantities of feed, which should be largely home grown:

15 bushels of corn.
10 bushels of oats.
2 tons of legume hay.
1 to 2 acres of good pasture.

The corn and oats should be ground and mixed with 500 pounds of cotton seed meal and 200 pounds of wheat bran. All of this feed excepting the wheat bran can be grown on any cotton farm and the milk cow will furnish a good market for them.

Eastern North Carolina has wonderful natural possibilities for the production of cream on a commercial basis. No section of this State can produce corn and soybeans, the basic feeds in economical milk production, more abundantly and cheaper than this section. Good pastures, which are essential in successful dairying, are now being developed in many counties. Only one additional thing is needed to make Eastern North Carolina the greatest butterfat producing section of the State and that is a desire on the part of the farmers of that section to do dairy work.

THE FAMILY PORK SUPPLY

One brood sow should be kept on each farm in North Carolina for each 125 bushels of corn produced on that farm which is not needed for other purposes. This amount of corn, properly supplemented with wheat mill feed and fish meal or tankage, will carry two average litters of pigs to a weight of 200 pounds each.

A properly balanced hog feed changes with the weight of the animal, gradually increasing the corn as the pig grows older and larger.

It is just as reasonable to substitute acid phosphate for nitrogen in compounding a fertilizer formula for plant food, as it is to substitute corn for fish meal or tankage in hog feed.

For hand-feeding four good formulas follow, and each slop mixture is compounded to *balance an equal amount of corn by weight.* The mixtures are to be fed in the form of a *thick* slop, and an equal amount of corn (shelled basis) fed separately, dry. (See Extension circular number 133.)

Balanced Rations for Swine

Slop Mixture No. 1
For Weanling Pigs

Fish meal or tankage	1 part
Corn meal	1 part
Red Dog or middlings	2 parts
To make	4 parts

Slop Mixture No. 2
For 60 Pound Pigs

Fish meal or tankage	1 part
Corn meal	3 parts
Red Dog or middlings	1 part
To make	5 parts

Slop Mixture No. 3
For 100 Pound Shoats

Fish meal or tankage	1 part
Corn meal	4 parts
Red Dog or middlings	1 part
To make	6 parts

Slop Mixture No. 4
For Hogs, 150 Pounds and Over

Fish meal or tankage	1 part
Corn meal	6 parts
To make	7 parts

Feed all they will clean up in twenty minutes, of the specified slop mixture, and an equal amount by weight of corn (shelled for young pigs). Add 25 per cent when feeding on the ear.

Fifty pounds of fish meal or tankage, and fifty pounds of wheat mill feed, when used in the above mixtures, as specified, is all the supplemental feed necessary to carry a weanling pig to a weight of 200 pounds, the use of more of these feeds is unnecessarily expensive. The balance of the feed, over 80 per cent of the total, is corn, a home-grown product, which not only produces the highest quality of pork, but which, when properly supplemented, will produce more pounds of pork per acre than any other crop.

If toll is excessive or grinding inconvenient, substitute shelled corn for corn meal in the slop mixture. Ground wheat, barley or rye should not be substituted for the wheat mill feed.

Recommendations for Using Self-feeder

The use of self-feeders for fattening hogs is heartily recommended.

In all cases, hogs should be weighed when turned on a self-feeder and a record kept of all feeds put in the feeder. A handy method of doing this is to tack a large piece of cardboard on the under side of the roof of the feeder.

When the initial weight and amount of feed eaten during a certain period of time are known, it is a simple matter to again weigh the hogs and compute the cost of gains, a question about which the farmer often has too little knowledge.

Corn should not be mixed with supplements in a self-feeder.

When the price of high-grade middlings is reasonable, this feed should be kept in a compartment of the feeder until the animals weigh around

100 pounds, after which it may be discontinued with the result of somewhat decreasing the cost of gains as compared with continuing it.

Fish meal or tankage should be kept in one compartment *constantly;* profit is frequently sacrificed by farmers through failure to do this in the mistaken belief that results will be about the same, and the cost of gains cheapened. The opposite is true.

Corn should occupy the largest compartment, and minerals should be present.

Professor E. H. Hostetler, in charge of Swine Investigation, has recently completed an experiment in which he substituted equal parts of fish meal and cottonseed meal, thoroughly mixed, for clear fish meal or tankage. The present low price of cottonseed meal, coupled with the low freight rate it takes in comparison with the higher price and much higher freight rate on fish meal, makes this a rather attractive proposition. However, it should be constantly kept in mind that cottonseed meal is a dangerous feed for hogs, and one resultant fatality might easily offset all saving in the cost of gains through its use. Until further experiments are concluded, it should not be used in excess of the amount specified above, and care should be taken to see that the corn compartment is kept constantly supplied and feeding freely.

The Cost of Producing Pork

The cost of producing pork depends upon the fertility of the farm where it is produced.

The cost of cultivating an acre of corn is affected to a very slight degree, if at all, by the yield of grain; it follows then that large yields result in low cost of production. One farmer hogs down an acre of corn yielding twenty bushels which cost $19 to produce, and the corn properly supplemented, at a cost of $3.40, produces 286 pounds of gain on his hogs. The cost per 100 pounds gain is, $7.83.

Another farmer has an acre which will yield 40 bushels and requires $6.80 worth of supplement which added to the cost of producing the corn, makes $25.80, the cost of producing 572 pounds of gain on his hogs, or $4.51 per 100 pounds.

In neither of the above cases has the market price of corn affected the cost of production. Its use would indicate the same cost in both cases.

Thousands of hogs on hundreds of farms have proven the soundness of the system of feeding recommended by the College, and all attempts of which we have records made by farmers to improve upon it, have resulted in serious sacrifice of profit.

When pork can be produced at the cost shown above, there is certainly little justification for buying it at the usual market price.

And finally, it may be said with assurance, that merely including hogs in the system followed on any farm will not make that farm profitable. There must be, in addition to the hogs, sufficient fertility to produce a reasonable yield of corn, and a knowledge of proper feeding.

THE FARM FLOCK OF SHEEP

It is a universally accepted fact that where sheep are maintained on farms under proper conditions of feed and management that they will pay equally as large or greater profits than most any other farm animal. There are limitations, however, beyond which the farmer can not go and expect to realize the same profits as can be obtained from the small farm flock ranging from 20 to 40 sheep. The latter number is the maximum recommended except possibly where rather unusual conditions exist, in which case, more animals may be kept with profit. It should be kept in mind that sheep are a side line and if handled properly can be made to turn much of the waste feeds of the farm into profit. This should not be taken to mean, however, that sheep can subsist under such conditions without additional feed being provided.

Sheep require first, plenty of good pasture the same as other farm animals. A succession of temporary pastures is best as this helps materially in preventing the ravages of the stomach worm which is the greatest menace to the sheep industry. Permanent pastures can be used in part to advantage but it is better not to use them wholly unless the farmer, for some reason, has definite control over stomach worm infestation. Even then, however, it is best to provide some temporary pastures such as rye, rape, oats, or clover as sheep relish them greatly and especially will the lambs do well if the mothers are getting plenty of tender succulent pasture during the lamb growing season.

The requirements for sheep would be about as follows on the average farm, assuming that pastures have been arranged both for summer and to a considerable extent for late fall, winter and early spring grazing: One hundred and fifty pounds of grain and 400 pounds of hay used as a supplement to the above pastures primarily during the wintering period should largely fill the requirements. This may vary somewhat, depending upon the size of the sheep, the quality of the feed and the section of the State in which the sheep are being grown. The western section of the State has more rigid conditions than the eastern part and would therefore, require somewhat more feed. One of the chief matters to give attention in sheep production is to be sure that the ewes are fed well during the wintering period in order that they may nourish and give birth to strong thrifty lambs and furnish a plentiful supply of milk as it should be remembered that lambs can be grown out largely and under most conditions are developed altogether up to the marketing period on the mother's milk.

The infestation of stomach worms should be guarded carefully. In the spring drench both ewes and lambs frequently with the bluestone treatment. This is made by dissolving one-fourth pound of bluestone in a quart of hot water. When thoroughly dissolved add enough water to bring the total solution up to three gallons. This is sufficient to drench one hundred

sheep. The treatment should be repeated every three or four weeks during the spring or summer session and the ewes drenched the last thing before going into winter quarters. The dosage for ewes is 3½ ounces and for lambs 1¾ ounces.

A SAFE CROPPING PROGRAM

North Carolina farmers who wish to change their farm operations in 1927 so as to effect decreases in their acreages of cotton in accordance with the plans of the Central Committee and at the same time wish to produce ample food and feed for the farm and to look after the building up of the soils are advised to do the following:

1. Grow enough food and feed crops to supply as nearly as practicable the needs of the farm livestock and the farm family.

2. Begin definite systems of crop rotations in which legumes and small grains will be grown, part of which will be used for hay and grazing and the remainder turned back into the soil for soil improvement, either in their entirety or after harvesting the seed.

3. Use the very best seed and apply, when needed, the right kinds and amounts of fertilizer. Prepare the land, and seed and cultivate the crops in the best possible manner. That the cotton produced in 1927 may be done as cheaply as possible, confine its acreage to the very best suited lands, fertilize it with the best kinds and amounts of fertilizer and cultivate it well and at the right time, using for planting the best seed obtainable such as Mexican or Cleveland varieties. Fairly large yields of cotton produced economically will lead to the cheapest unit production. This is not only a good plan to follow in the production of cotton but other crops as well.

Grow Plenty of Corn

In order to have the cotton produced this year as a surplus cash crop as nearly as possible on every farm, it is suggested:

(1) That sufficient corn be grown on every farm to meet its needs. Plant corn on suitable land which should be well prepared and fertilized. On average soils in the Coastal Plain and Piedmont sections, the crop will need from 200 to 400 pounds per acre of the following fertilizer mixtures for best returns:

For Coastal Plain. Six to eight per cent available phosphoric acid, five to six per cent ammonia and two to three per cent potash.

For Piedmont. Ten per cent available phosphoric acid, four to five per cent ammonia and 0 to two per cent potash.

As the organic matter of the soil is increased, the percentages of ammonia in the fertilizer mixtures should be decreased. When the corn is planted, either soybeans or cowpeas should be seeded in at least a part of the crop. These secondary crops, when properly handled may be used to aid in building up the fertility of the land and will supply some grazing after the corn is harvested. Good varieties of corn recommended for planting in

different sections are Latham's, Indian Chief, Bagley's and Biggs' for the Coastal Plain; and Shoaf's Prolific, Jarvis' Prolific (yellow), Weekley's Improved, Southern Beauty and Cocke's Prolific for the Piedmont Region.

Plant More Rye

(2) That increased acreages of Abruzzi rye be seeded on well prepared land at the rate of four to five pecks per acre during the fall on cotton land and elsewhere on the farm. This will provide some grazing, will aid in conserving soluble plant food and will provide some seed for sale and for planting purposes the following fall. Not more than 30 to 35 per cent of the farm should go in rye or other winter cover crops. To fertilize rye on poor to medium soils, use from 200 to 400 pounds per acre of mixtures containing about 8 per cent available phosphoric acid and 3 to 5 per cent ammonia and 2 to 3 per cent potash, for Coastal Plain soils; and 10 to 12 per cent available phosphoric acid and 3 to 4 per cent ammonia for Piedmont soils.

That portion of the rye crop grown for seed or for turning under should not be grazed, or only lightly so, if maximum returns are to be obtained. By using a high type of Abruzzi rye seed for planting, there will be afforded a small revenue from the sale of surplus seed. Certainly ample seed should be saved for the following year's planting.

Plan for More Oats

(3) More oats, or oats-and-vetch, should be planted next fall than is usually the case. For spring seeding of oats alone, use about three bushels of seed per acre of the Fulghum or Burt varieties. This should be drilled or seeded broadcast on well prepared land during the latter part of February or early in March. For fall seeding, use from two and a half to three bushels of seed per acre of a good strain of Appler oats, or the same amount and variety of oats drilled or seeded broadcast with 15 to 20 pounds of hairy vetch seed.

The oats, or oats-and-vetch, with a normal season and with the same fertilizers as recommended for rye will produce a considerable quantity of nutritious hay per acre for the farm stock. In most cases, sufficient oats, or oats-and-vetch, should be seeded, too, to provide for the seed needs of the farm for the coming year. Any surplus produced could be sold to less fortunate neighbors.

Plant Barley Next Year

(4) That a small acreage of Tennessee Hooded barley be planted on every farm next fall for early spring grazing and for seed production. Barley appears to have wide adaptation to the soils of the Coastal Plain and Piedmont sections of North Carolina. Its average yield of grain in the Piedmont section during four years has been found to be about the same as Fulcaster

wheat, slightly more than Fulghum oats and a little less than Abruzzi rye. It produced more straw than Fulghum oats, but less than either Fulcaster wheat or Abruzzi rye. It comes early in the spring, has quite a leafy growth and is well suited for grazing purposes. At the present time, the supply of seed is limited and it appears that there will probably be considerable demand for them at fairly good prices for planting purposes.

More Soybeans Needed

(5) That increased acreages be planted to soybeans on every farm. Some of the beans should be used for soil improving purposes, for hay, for grazing and for the production of seed. This crop has a wide adaptation to various soil and climate conditions, and is one of the best legumes for the State. At least a few acres of this legume might be put in with profit by every farmer. Those who have grown soybeans previously will no doubt increase their acreage. When the beans are grown on poor or medium poor soils, they should be fertilized with from 200 to 400 pounds per acre of mixtures containing about 8 per cent available phosphoric acid, 1 to 2 per cent ammonia and 3 to 4 per cent potash in the Coastal Plain; and 10 to 12 per cent available phosphoric acid, 0 to 1 per cent ammonia and 3 to 4 per cent potash on Piedmont soils.

Varieties well suited for different purposes in those sections of the State in which cotton is grown are—

For Coastal Plain:
For hay—Laredo, Otootan and Mammoth Yellow.
For seed—Mammoth Yellow and Biloxi.
For soil improvement—Mammoth Yellow and others.

For Piedmont:
For hay—Virginia and Laredo.
For seed—Virginia, Herman and Laredo.
For soil improvement—Mammoth Yellow and others.

Plant Some Cowpeas

(6) That cowpeas be grown in larger acreages than at present for hay, for seed and for soil improving purposes. This crop should especially be increased on those farms where they have succeeded well in the past. Cowpeas do well on many soils and many farmers already have on hand seed which they can use this year in planting increased acreages. The fertilization suggested above for soybeans will be found well suited for cowpeas.

Varieties found well suited for planting in different sections of the State are as follows:

For Coastal Plain:
For seed—Groit, Whippoorwill and Brabham.
For hay—Iron, Brabham and Wonderful.

For Soil improvement—Wonderful, or the ones seed of which are already on the farm.

For Piedmont:
For seed—Groit and Whippoorwill.
For hay—Monetta and Wonderful.
For soil improvement—Wonderful, or the ones seed of which are already on the farm.

Try Velvet Beans

(7) That the acreage of velvet beans be increased for soil improvement and for light grazing during the late fall and winter in the central, eastern and southeastern parts of the State. When put in corn, velvet beans should be planted two or three feet apart in the row after the corn has been chopped or they may be sown alone in late spring in four to five-foot rows, spacing the hills two plants to the hill about three feet apart in the row. The 100-Day Speckled is a suitable variety to use. It requires one bushel to seed from three to five acres. With proper care in planting and cultivation, a dense thick mat of the vines should cover the land before frost. For best growth, this legume will require the same fertilizer and cultural treatments as soybeans.

Other Hay Crops

For land suited to crimson clover, a considerable acreage of this crop should be seeded early next fall for hay, for grazing and for soil improving purposes. It may be seeded alone at the rate of about 15 pounds per acre or with small grain at the rate of 8 to 10 pounds with one bushel of rye, two and a half bushels of oats, or one and a half bushels of wheat. Crimson clover provides a limited amount of grazing, a splendid quality of hay and, if not grazed too severely, will yield much material to turn under for soil improvement. The fertilizer treatment suggested for soybeans is also well suited to this crop.

By growing all the above crops in definite systems of crop rotation and then handling a portion of them in such a way as to add considerable organic matter and nitrogen to the soil, the future productiveness of the soils may be gradually increased, and, if the acreage of those grown is sufficient, enough food and feed will be secured to adequately meet the needs of the farms, thereby leaving the cotton produced as a surplus cash crop. If all of the legumes produced are removed, the soils of cotton farms will gradually be depleted. Such depletion will be much more rapid than where cotton was grown continuously on the same land. Especially would this be true when only lint is sold from the farms.